

Fig. 2. Margin-rates of *Unsyu* Mandarins in Supermarkets (2002)
 Note : "Dominant" means more than 50% except non-packing (more than 30%).

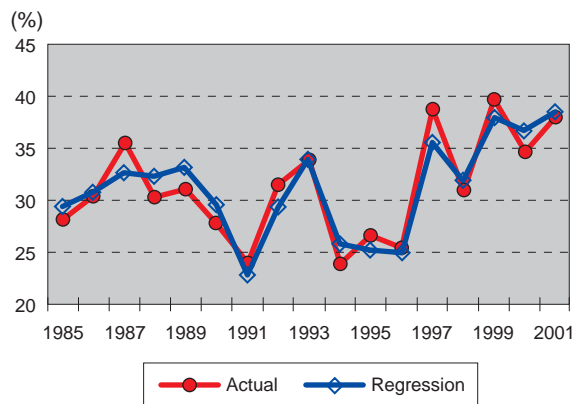


Fig. 3. The Margin-rates of *Unsyu* Mandarins
 Note: Regression by wholesale price and volume at each purchase.

household have fallen from 2.6kg in 1985-1987 to 1.9kg in 1999-2001. Further, this situation accompanied a rise in the consumer price as compared to other fruits that lasted until the middle of the 1990s.

These trends mean that *Unsyu* mandarins have been shifting to a lower consumption volume, and consumers require high quality at the same time.

Incidentally, in order to make clear the determining factors of the margin-rate of fruit-

retailing, we conducted a questionnaire at supermarkets. According to this investigation the majority of respondents answered that they lay less stress on wholesale prices as a determining factor of the margin for fruit selling. Regarding *Unsyu* mandarins, other factors are also important. As shown in Fig. 2 the margin-rates of *Unsyu* mandarins are related to divergence of retail packing types. On the other hand, the margin-rates are almost the same among the buying-in routes of supermarkets.

Finally, taking into account the investigation thus far, we hypothesize that the determining factors of the margin-rate of *Unsyu* mandarins are the level of wholesale prices and changes of sales volume of one purchase by consumers. The latter is related to the packing costs of the retailers. In order to prove this, we conducted regression analysis in which the independent valuable is the margin-rate and dependant valuables are the wholesale price and the volume of one purchase. As shown in Fig. 3, it almost traces the actual trends (adjusted R-squared is 0.853). It is indicated that the rise of the margin-rate of *Unsyu* mandarins in recent years is related to a reduction in sales volume at each purchase.

Macro-economic Analysis of Food Distribution Costs

Tetsuro YAKUSHIJI

Environments surrounding food distribution are changing. For example, the food distribution channel is diversifying and food imports are increasing.

In order to secure the farmers' income and to supply food to consumers at lower prices, a decrease in food distribution costs is necessary.

In the food system, the importance of the

related distribution industry is growing in Japan. In the period from 1990 to 1995, of 12 trillion yen of the increase of food and beverage expenditure (from 68 to 80 trillion yen), 7 trillion yen was accounted for by the increase of the value added by the distribution industry (from 16 to 23 trillion yen). In other word, 57% of the increase in food and beverage expendi-

ture belonged to the related distribution industry. It is expected that this growing importance is mainly due to the rise in margin rate (wholesale margin and retail margin).

This study was implemented to make clear levels of distribution costs of agricultural, fishery and food industry products by estimating margin rates in Japan in time-series and comparing them with manufactured products and with margin rates in the U.S. Moreover, effects of reduction on consumer prices are estimated.

Margin rates are estimated using input-output tables. In 1995, the margin rates were 41.4% for agricultural and fishery products and 37.6% for food industry products. These levels were lower than 44.2% for the average of manufactured products (Fig. 1). In particular, they were considerably lower than 52.8% for textiles (Fig. 2).

The margin rate for agricultural and fishery products fluctuated year by year. This is, however, due to price change. If the margin rate is calculated in real terms (1995 prices), it shows a tendency to rise (dotted line in the Fig. 1). The margin rate for food industry products continuously increased. It especially rose sharply from 1990 to 1995.

Comparing with the U.S., the margin rate for food industry products in Japan became higher than the U.S. in around 1995, although it had been lower until about 1990. For agricultural and fishery products, the margin rate in Japan was always higher than in the U.S. (Fig. 3). Examining detailed agricultural and fishery products, there is not a significant difference between the two countries for crops, but fishery products relatively raises Japan's margin rate for agricultural and fishery products (Fig. 4). This probably reflects Japanese consumers' strong preference for raw fish.

Taking into account Japanese consumers' frequent-small-quantity-purchasing behavior resulting from dietary habits, attaching importance to perishable products, which is different from American consumers', Japan's higher margin rate does not necessarily indicate a less efficient distribution system than that of the U.S. Attention should rather be paid to the increase in margin rate for food industry products in Japan. This may reflect the growing distribution service to consumers resulting from increasing sales of take out dishes and packed lunches.

Using the equilibrium price model of input-output analysis, effects on consumer prices of a

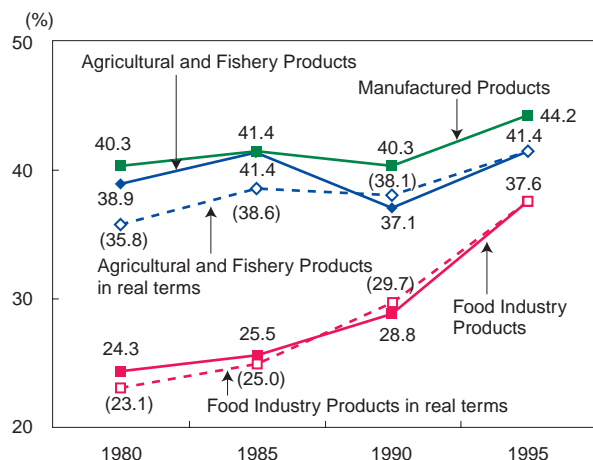


Fig. 1. Margin Rates in Japan: Agricultural and Fishery Products, Food Industry Products

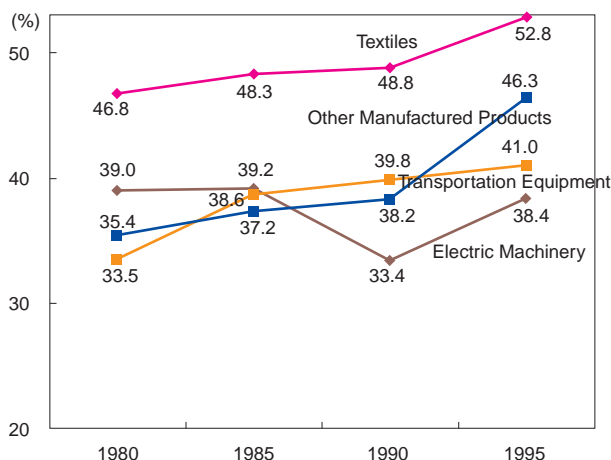


Fig. 2. Margin Rates in Japan: Manufactured Products

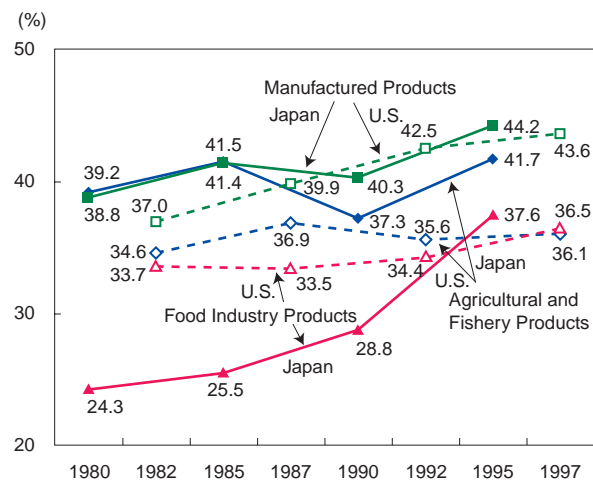


Fig. 3. Japan-U.S. Comparison of Margin Rates: Agricultural and Fishery Products, Food Industry Products

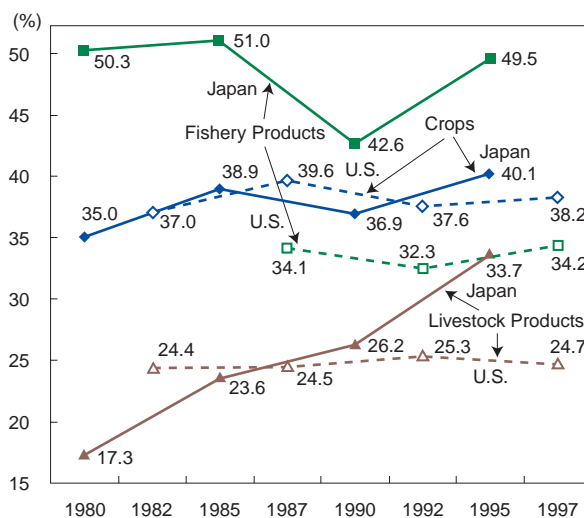


Fig. 4. Japan-U.S. Comparison of Margin Rates: Detailed Agricultural and Fishery Products

Table 1. Effect of 1% Margin Cut on Consumer Prices

(%)

	1% cut of margin paid by food industry and drinking and eating establishments	1% cut of margin paid by household	1% cut of margin for all stages
Agricultural and fishery products	0.00	-0.41	-0.42
Food industry products	-0.05	-0.38	-0.42
Drinking and eating establishments	-0.11	-	-0.11

reduction of wholesale and retail margins was estimated. When all of these margins of agricultural, fishery and food industry products purchased by food industry, drinking and eating establishments and consumers falls by 1%, estimated reductions in consumer prices are

0.42% for agricultural and fishery products and food industry products, and 0.11% for drinking and eating establishments (Table 1).

Research Members

Tetsuro Yakushiji and Atsuyuki Uebayashi

Structural Change of Farmland-use: the Growth of Large-scale Farms and the Retreat of Farmland-use

Tomoaki ONO

1. Objective and method

Since the second half of the 1980s, the number of farms has decreased by about 10% every 5 years and the structure of Japanese agriculture has improved. There are two results of this change: one is the progress of agricultural structure in which many farms will become larger, and another is the decline of agriculture in which non-cultivated farmland will increase. This study analyzes these two results in farmland-use using data from agricultural censuses collected every 5 years. Hokkaido is excluded in this paper since farms there are much larger than those in other areas.

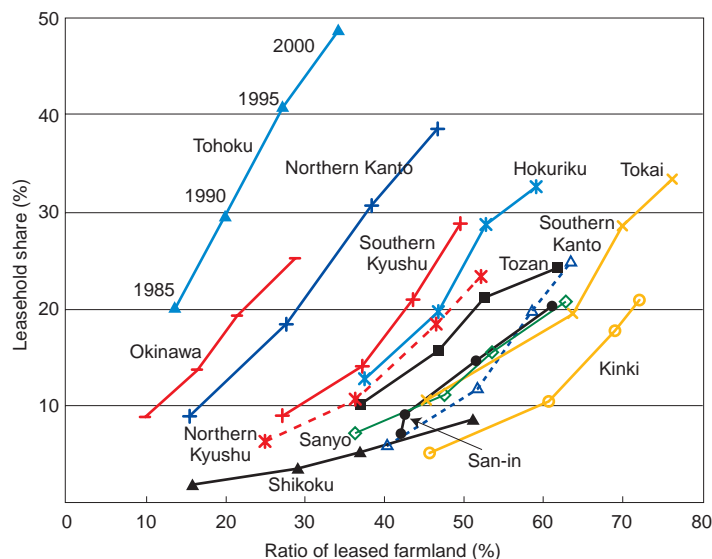


Fig. 1. Ratio of Leased Farmland and Leasehold Share of Large-scale Farms

Note: 1. Large-scale farms manage 5 ha or more farmland.
2. Ratio of leased farmland is the ratio of leased land of large-scale farms to their farm land.
3. Leasehold share is the ratio of leased land of large-scale farm to total leased land.

2. Outline of results

(1) According to many farmers' increasing giving up farming, the loaning of farmland by large-scale farms is increasing and structural change is progressing. Leased farmland increased about twofold in 15 years, from 320,000 ha in 1985 to 630,000 ha in 2000. The increase of leased farmland is gradually accelerating, with a 90,000 ha increase during 1985-1990, a 100,000 ha increase during 1990-1995, and a 120,000 ha increase during 1995-2000. On the other hand cultivated farmland decreased from 4,570,000 ha to 3,880,000 ha during those 15 years, and agricultural resources decreased.

(2) Loaning of farmland is increasing and large-scale farms are growing.

a) Farmland loans by family farms (households which manage 0.1 ha or more of farmland) are at 200,000 ha and those by non-farmers (households which own 0.1 ha or more of land but manage less than 0.1 ha of cultivated land) are 280,000 ha in 2000. The loan of farmland by non-farmers is more than that by family farms. Small-scale farmers, part-time farmers and farmers over 65 years old are the main farmland lenders.

b) Large-scale farmers (who manage 5 ha or more) increased: 190,000 farms in 1985, 260,000 farms in 1990, 360,000 farms in 1995, and 440,000 farms in 2000. They increased greatly in prefectures in Tohoku, Hokuriku, Northern Kanto, Kyushu, etc.

Leased farmland is concentrated in these large-scale farms. Their leasehold increased to 160,000 ha in 2000, or 2.8 times the 1990 level